commodore

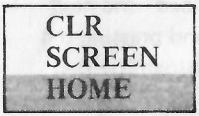
A Brief Introduction to Your Commodore PET

(TEMPORARY VERSION)

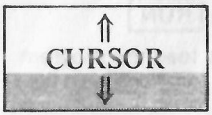
II. SPECIAL KEYS

The following keys, when pressed while the SHIFT key is being held down, will perform the following functions:

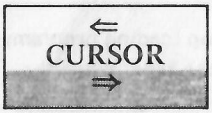
LOADS and RUNS the next encountered program from the built-in tape unit.



Clears print from screen and moves cursor to upper left corner of screen. Program statements and all variables are retained.



Moves cursor one space up. Will not scroll off top of screen. Does not delete characters as it passes over them.



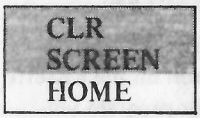
Moves cursor one space left (backspace). Wraps around to rightmost position on next highest line. Does not delete characters as it passes over them.

Resets reverse field printing to normal printing.

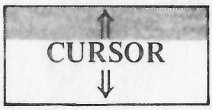
Inserts a space immediately in cursor position. All characters to right of inserted space are moved one space to right. Stops when 80th character is filled.

When the SHIFT key is not pressed, the keys will perform different functions, as indicated:

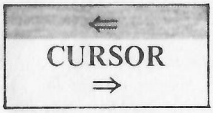
Stops execution of command in progress (LIST, LOAD, RUN, etc.).



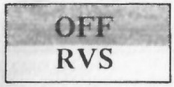
Returns cursor to upper left corner of screen.



Moves cursor one space down. When cursor is at bottom of screen, print will scroll off top of screen. Does not delete characters as it passes over them.



Moves cursor one space right. Will wrap around to left most position of next lowest line. Does not delete characters as it passes over them.



Enables reverse field print (black characters on a white background).

Deletes character immediately to left of cursor. All characters to right of deletion are moved one space left. Line is filled with trailing blanks if needed.

III. BASIC COMMANDS

Basic Commands and Statements

COMMAND/ STATEMENT	EXAMPLE	PURPOSE
CLR	CLR	Sets variables to zero.
CMD	CMD D	Keep IEEE device D open to monitor bus.
CONT	CONT	Continue program execution after a STOP command. No program changes permitted.
GOTO	GOTO L	Continue program execution at line L after a STOP command. Program changes are permitted.
FRE	PRINT FRE (0)	Returns number of bytes of available memory.
LIST	LIST	Lists current program.
	LIST -L	Lists current program through line L.
	LIST L-M	Lists lines L through M of current program.
	LIST L-	Lists current program from line L to end.
LOAD	LOAD	Loads next encountered program from built-in tape unit.
	LOAD "NAME"	Loads file NAME from built-in tape unit.
	LOAD "NAME," D	Loads file NAME from device D.
NEW	NEW	Deletes current program from memory, sets variables to zero.
PEEK	PEEK(A)	Returns byte value from address A.
POKE	POKE A,B	Loads byte B into address A.
PRINT	PRINT A	Prints value of A on display screen.
	PRINT A$	Prints specified string on screen.
	PRINT #D,A	Prints value of A on device D.
	PRINT #D,A$	Prints specified string on device D.
RUN	RUN	Begins execution of program at lowest line number.
	RUN L	Begins execution of program at line L.

Basic Commands and Statements (Continued)

COMMAND/ STATEMENT	EXAMPLE	PURPOSE
SAVE	SAVE	Saves current program on built-in tape unit.
	SAVE "NAME"	Saves current file or program NAME on built-in tape unit.
	SAVE "NAME," D	Saves current program or file NAME on device D.
	SAVE "NAME," D,C	Saves file NAME on device D. C specifies EOF or EOT.
STOP	STOP	Stops program execution.
SYS	SYS X$	Complete control of PET is transferred to a subsystem at hex address contained in the string.
TI$	TI$="HHMMSS"	Sets PET's internal clock to real time.
	PRINT TI	Displays number of 'jiffies' since PET was powered up or clock was zeroed. (A jiffy = 1/60 of a second.)
USR	USR(X)	Transfers program control to a program whose address is at locations 1 and 2. X is a parameter passed to and from the machine language program.
WAIT	WAIT A,B,C	Stops execution of BASIC until contents of A, ANDed with B and exclusive ORed with C, is not equal to zero. C is optional and defaults to zero.
CLOSE	10CLOSE N	Closes logical file N.
DATA	10DATA 1,2,3,4	Specifies data to be read from left to right.
	20DATA TOM,SUE	Alphabetics do not need to be enclosed in quotes.
	30DATA "TOM DOE"	If strings contain spaces, commas, colons, or graphic characters, the string must be enclosed in quotes.
DIM	10DIM A(n)	Specifies maximum number of elements in an array or matrix.
	20DIM A(n,m,o,p)	Specifies maximum number of dimensions in an array.
	30DIM A(n),B(m)	Number of arrays limited by memory.
	40DIM A(N)	May be dimensioned dynamically.
	50DIM A$(n)	Strings may be dimensioned.
END	999END	Terminates program execution.
GET	10GET C	Accepts single character from keyboard.
	20GET C$	Accepts single string character from keyboard.
	30GET #D,C	Accepts single character from specified device.
	40GET #D,C$	Accepts specified single string character from device D.

Basic Commands and Statements (Continued)

COMMAND/ STATEMENT	EXAMPLE	PURPOSE
INPUT	10INPUT A	Accepts value of A from keyboard.
	20INPUT A$	Accepts string from keyboard. The string does not have to be enclosed in quotes.
	30INPUT A,A$,B,B$	Accepts specified values from keyboard.
	40INPUT #D,A	Accepts value of A from device D.
	50INPUT #D,A$	Accepts specified string from device D.
	60INPUT #D,A,A$,B,B$	Accepts specified values and strings from device D. Strings do not have to be enclosed in quotes.
LOAD	10 LOAD	Loads next encountered program or file, on built-in tape unit, into PET's memory.
	20LOAD "NAME"	Loads program or file NAME into memory from built-in tape unit.
	30LOAD "NAME",D	Loads specified file NAME from device D.
OPEN	10 OPEN A	Opens logical file A for read only from built-in tape unit.
	20 OPEN A,D	Opens logical file A for read only from device D.
	30 OPEN A,D,C	Opens logical file A for command C from device D.
	40 OPEN A,D,C,"NAME"	Opens logical file A on device D. If device D accepts formatted files, file NAME is positioned for command.
POS	10PRINT POS(0)	Prints next available print position (position of cursor on screen).
PRINT	10PRINT A	Prints value of A on display screen.
	20PRINT A$	Prints specified string on screen.
	30PRINT A,A$	Prints specified values or strings on screen, beginning in next available print position (pre-TABbed positions are in columns 10,20,30,40, etc.).
	40PRINT A;A$	Prints on specified values and strings on screen separated by 3 spaces if numeric, concatenated if string.
	50PRINT #D,A	Prints specified value on logical file D.
	60PRINT #D,A$	Prints specified string on logical file D.
READ	10READ A	Obtains value of A from a DATA statement.
	20READ A$	Obtains string literal from a DATA statement.
	30READ A,A$,B,B$	Obtains specified values and strings from DATA statements.
REM	10REM **COMMENT**	Inserts non-executable comments in a program for documentation purposes.
RESTORE	10RESTORE	Permits re-reading of DATA statements without re-running program.

Basic Commands and Statements (Continued)

COMMAND/ STATEMENT	EXAMPLE	PURPOSE
TAB	10 PRINT TAB(N);A	Prints value of A in character position N+1 on screen.
	20 PRINT TAB(N);A$	Prints string beginning in character position N+1 on screen.
VERIFY	10 VERIFY	Verifies most recent program saved on built-in cassette by reading it and comparing it with program still in PET's memory.
	20 VERIFY "NAME"	Verifies specified file NAME saved on built-in cassette by reading it and comparing it with program still in PET's memory.
	30 VERIFY "NAME",D	Verifies specified file NAME saved on device D by reading it and comparing it with program still in PET's memory.
SPC	10 SPC(N)	Prints N spaces or blanks.
FOR . . . NEXT	10 FOR A = 1 TO 20 : : 90 NEXT A	Loop control. Performs all instructions between FOR and NEXT as many times as specified by index. In this example, the index variable is A.
STEP	10 FOR A = 1 TO 20 STEP 2 : : 90 NEXT A	Step specifies size of increment to be added to index to increase or decrease its value towards the desired number of iterations.
IF . . . THEN	10 IF A = 10 THEN PRINT A	If condition is 'TRUE,' instruction following 'THEN' (in this example, 'PRINT A') would be executed. Otherwise, the next statement in sequence is executed.
IF . . . GOTO	10 IF A=1 GOTO L	If condition is true, control is transferred to specified line. Otherwise, the next statement, following the IF . . . GOTO, is executed.
GOTO	10 GOTO L	Transfers control (jumps) to specified line, skipping over intervening lines.
GOSUB	10 GOSUB L	Begins execution of a subroutine which begins on a specified line.
ON . . . GOTO	10 ON A GOTO L,M,N	Transfers control to specified line (in this example, L,M, or N, depending on value of index A.
ON . . . GOSUB	10 ON A GOSUB L,M,N	Begins execution of subroutine which begins on line L,M, or N, depending on the value of index A.
RETURN	9990 RETURN	Subroutine exit; transfers control to the statement following most recent GOSUB directing transfer to the subroutine.

String Functions

FUNCTION	EXAMPLE	PURPOSE
ASC	10 A=ASC("XYZ")	Returns integer value corresponding to ASCII code of first character in string.
CHR$	10 A$=CHR$(N)	Returns character corresponding to ASCII code number.
LEFT$	10 ?LEFT$(X$,A)	Returns leftmost A characters from string.
LEN	10 ?LEN(X$)	Returns length of string.
MID$	10 ?MID$(X$,A,B)	Returns B characters from string, starting with the Ath character.
RIGHT$	10 ?RIGHT$(X$,A)	Returns rightmost A characters from string.
STR$	10 A$=STR$(A)	Returns string representation of number.
VAL	10 A=VAL(A$) 20 A=VAL("ABCD")	Returns numeric representation of string. If string not numeric, returns "Φ"

ASC, LEN and VAL functions return numerical results. They may be used as part of an expression. Assignment statements are used here for examples only; other statement types may be used.

Arithmetic Functions

FUNCTION	EXAMPLE	PURPOSE
ABS	10 C=ABS(A)	Returns magnitude of argument without regard to sign.
ATN	10 C=ATN(A)	Returns arctangent of argument. C will be expressed in radians.
COS	10 C=COS(A)	Returns cosine of argument. A must be expressed in radians.
DEF FN	10 DEF FNA(B)=C*D	Allows user to define a function. Function label A must be a single letter; argument B is a dummy.
EXP	10 C=EXP(A)	Returns constant 'e' raised to power of the argument. In this example, e^A.
INT	10 C=INT(A)	Returns largest integer less than or equal to argument.
LOG	10 C=LOG(A)	Returns natural logarithm of argument. Argument must be greater than or equal to zero.
RND	10 C=RND(A)	Generates a random number between zero and one. If A is less than 0, the same random number is produced in each call to RND. If A = 0, the same sequence of random numbers is generated each time RND is called. If A is greater than 0, a new sequence is produced for each call to RND.

Arithmetic Functions (Continued)

SYMBOL	EXAMPLE	PURPOSE
SGN	10C=SGN(A)	Returns -1 if argument is negative, returns 0 if argument is zero, and returns +1 if argument is positive.
SIN	10C=SIN(A)	Returns sine or argument A must be expressed in radians.
TAN	10C=TAN(A)	Returns tangent of argument. A must be expressed in radians

Arithmetic Operators

SYMBOL	EXAMPLE	PURPOSE
=	10A=B 20LET A=B	Assigns a value to a variable. Let is optional.
↑	30PRINT A↑2	Exponentiation, in example, A^2.
/	35C=A/8	Division
*	40C=A*8	Multiplication
+	50C=A+8	Addition
-	60C=A-8	Subtraction
=	10IF A=B THEN PRINT C	Expression 'equals' expression.
<>	10IF A<>B THEN C=4	Expression 'does not equal' expression.
<	10IF A<B THEN C$="X"	Expression 'is less than' expression.
>	10IF A>B THEN C$=D$+E$	Expression 'is greater than' expression.
<=	10IF A<=B THEN C=20	Expression 'is less than or equal to' expression
>=	10IF A>=B THEN C=D-1	Expression 'is greater than or equal to' expression
AND	10IF A AND B THEN C=0	Expression 1 and expression 2 must BOTH be true for statement 10 to be true
OR	20IF A OR B THEN C=90	Expression 1 must be true or expression 2 must be true for statement 20 to be true.
NOT	30IF NOT A THEN PRINT C	Expression is true if A is false

**NOTE: The numerical values used in the evaluation of logical comparisons are 'TRUE' is any non-zero number and 'FALSE' is zero.

Special Symbols, Commands and Statements

SYMBOLS, COMMANDS, STATEMENTS	EXAMPLE	PURPOSE
:	10A=1:B=2:C=3	Allows multiple statements on a line.
;	10PRINT A;B	Allows same line printing. Elements are separated by 3 spaces.
	20PRINT A$;B$	Allows same line printing. String elements are concatenated.
,	10PRINT A,B	Allows same line printing. Elements are separated and printed in pre-TABbed print positions (columns 10,20,30, etc.)
,	LOAD "NAME," D	Separates elements in LOAD, SAVE, OPEN, and VERIFY.
?	10?A	Abbreviation for PRINT. Stores as one character; lists as word PRINT.
$	10A$="ABCDEFG"	String identifier.
%	10A%=INT(X)	Integer identifier.
"	10A$="ABCDEF"	String enclosures.
carriage return		Must follow every command, statement, or data entry; causes cursor to return to leftmost position on next lowest line. Signals "END OF INPUT LINE"
π		Value of Pi: 3.1415927

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